



QUARTERLY GROUNDWATER MONITORING AND  
SAMPLING REPORT FOR THE  
POWERINE REFINERY

October, 1988

PREPARED FOR

Powerine Oil Company  
P.O. Box 2108  
Santa Fe Springs, California 90670

By

ENSR CONSULTING AND ENGINEERING  
(Formerly ERT, Inc.)  
19782 MacArthur Boulevard, Suite 365  
Irvine, California 92715

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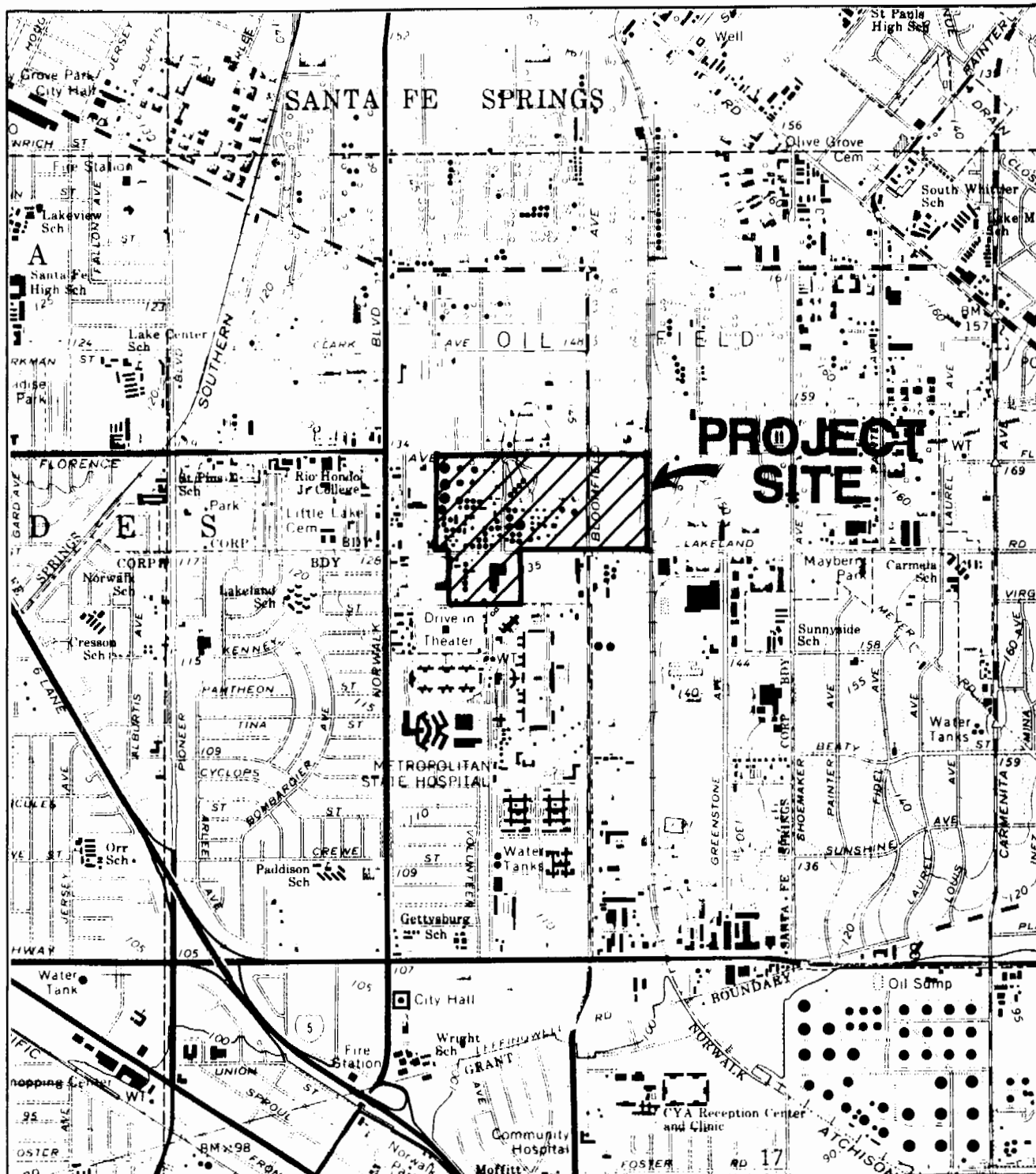
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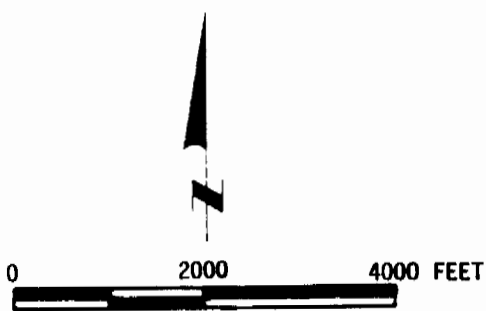
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## 1.0 INTRODUCTION

ENSR Consulting and Engineering (formerly ERT, Inc.) personnel measured water levels in thirteen (13) monitoring wells on September 6, 1988 and collected water samples from ten (10) monitoring wells between September 6 and September 8, 1988 at the Powerine Oil Company refinery located at 12354 Lakeland Road, Santa Fe Springs, California (Figures 1 and 2). Groundwater samples were analyzed to evaluate the concentrations of purgeable halocarbon and purgeable volatile organic compounds. This work was performed to comply with the requirements of the Regional Water Quality Control Board, Los Angeles Region (RWQCB) for quarterly monitoring, sampling, and analytical testing of perched groundwater beneath the refinery. This report summarizes the field procedures, laboratory analyses, and analytical results for the third quarter of 1988.



BASE MAP FROM U.S.G.S., 7½ MINUTE SERIES (TOPOGRAPHIC), WHITTIER QUADRANGLE



**ERT**

A RESOURCE ENGINEERING COMPANY

FIGURE 1  
PROJECT SITE LOCATION MAP

DRAWN BY:	DATE:	PROJECT NO.:
CHK'D BY: <i>DD</i>	REVISED:	DWG. NO.:

# FX-9 Wells

## 2.0 GROUNDWATER MONITORING AND SAMPLING

### 2.1 Water-Level Monitoring

Water-level monitoring was performed on September 6, 1988 using a Solinst water level meter in wells containing water only, and a stainless steel tape, water gauging paste, and gasoline gauging paste in wells containing free product (MW-501, MW-504). Monitoring equipment was decontaminated following each measurement. The decontamination procedure consisted of a tap water rinse, a thorough scrubbing using a non-phosphatic detergent in tap water, a second tap water rinse, and a final rinse using distilled water obtained from a State-certified analytical laboratory.

Groundwater monitoring results are summarized in Table 1 and are illustrated on the groundwater contour map in Figure 3. Groundwater elevations ranged from 37.19 feet above MSL in MW-502 to 53.65 feet above MSL in MW-104. The water table gradient slopes southwesterly across the site.

As in previous quarters, monitoring well MW-202 was observed to be dry. Monitoring well MW-504 contained 1.57 feet of free product and, MW-501 contained 1.36 feet of free product on the upper surface of the perched aquifer. Therefore, water samples were not extracted from these monitoring wells. The depth to groundwater was not measured in monitoring well MW-102 because the well was reportedly destroyed sometime prior to July, 1987.

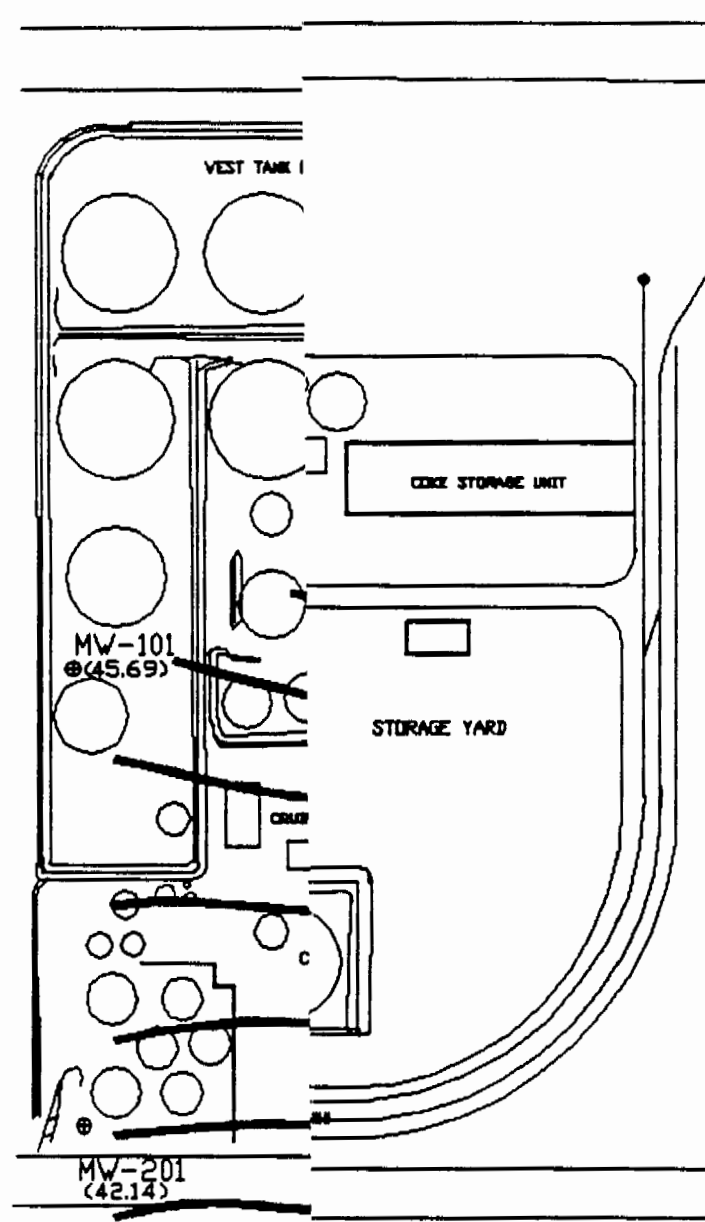


**TABLE 1**  
**SUMMARY OF WATER-LEVEL MONITORING DATA**

<u>MW*</u> <u>No.</u>	<u>Date</u>	<u>Elevation</u> <u>Top of</u> <u>Casing</u> <u>(feet,MSL)</u>	<u>Depth</u> <u>to</u> <u>Water</u> <u>(feet)</u>	<u>Water</u> <u>Level</u> <u>Elevations</u> <u>(feet,MSL)</u>	<u>Free</u> <u>Product</u> <u>(feet)</u>
101	09/06/88	134.98	89.29	45.69	ND
102	09/06/88	134.81	a	a	a
103	09/06/88	136.95	93.82	43.13	ND
104	09/06/88	141.60	88.25	53.35	ND
201	09/06/88	132.91	90.77	42.14	ND
202	09/06/88	137.89	b	b	b
203	09/06/88	143.89	96.30	47.59	ND
204	09/06/88	140.14	95.43	44.71	ND
205	09/06/88	138.17	90.67	47.50	ND
206	09/06/88	129.93	93.37	36.56	ND
501	09/06/88	128.70	94.39	36.35	1.36 (1.3)c
502	09/06/88	131.19	94.95	36.24	ND
503	09/06/88	131.43	93.26	38.17	ND
504	09/06/88	133.83	93.98	41.91	1.57 (1.83)c

**KEY**

ND = Not Detected  
a = Destroyed  
b = Dry Well  
c = Thickness of free product, previous quarter  
\* = Monitoring Well



**ERT**

**FIGURE 3  
GROUNDWATER CONTOUR MAP  
SEPTEMBER, 1988**

⊕ MW-2  
(36.5)

BY:	DATE:	PROJECT NO.:
BY:	REVISED:	DWG.NO.:

## 2.2 Groundwater Sampling

Ten (10) monitoring wells were sampled between September 6 and 8, 1988. Sampling began with monitoring wells MW-101 and MW-103, which were purged with a hand bailer because the water volume in these wells was insufficient to use an electrical submersible pump. The remaining monitoring wells were sampled starting with monitoring well MW-104, which contained water with the lowest reported concentrations of hydrocarbon compounds, and proceeded sequentially to wells with progressively higher reported concentrations. This sampling sequence was followed in order to minimize the potential for cross contamination between wells. Production well (P-6 on Figure 2) was not sampled since its associated holding tank remained unrepaired during the time of monitoring and sampling.

Before a sample was extracted, each well was purged of approximately four (4) well volumes of water using either a 1/3-horsepower Grundfos submersible pump, or a Teflon hand bailer. Prior to purging of the monitoring wells with the submersible pump, a fire permit was obtained to operate the gas operated generator at the well head. Upon removal of four (4) well volumes, the water's pH, temperature, and conductivity were measured and recorded. Purged water was discharged into 55-gallon drums to be later disposed of by refinery personnel.

After purging, water samples were extracted from the monitoring wells using a decontaminated Teflon bailer. Samples were placed into two (2) 40-milliliter VOA vials. The VOA vials are clear and pretreated with HCl, which inhibits the biodegradation of volatile aromatic compounds. All samples were properly labeled and immediately placed on ice in a portable cooler. In addition, two (2) sample blanks consisting of distilled water obtained from a State-certified laboratory were collected (MW-001, MW-002). These samples blanks were extracted from the same Teflon bailer used to sample the monitoring wells. Monitoring well MW-501 and MW-504 contained free product and,

therefore, were not sampled.

All equipment used to purge and sample the monitoring wells was decontaminated after each well was sampled. The decontamination procedure consisted of a tap water rinse, a thorough scrubbing in tap water and non-phosphatic detergent, a second tap water rinse, and a final rinse using distilled water.

A summary of the data recorded while sampling the monitoring wells is presented in Table 2. Conductivity values ranged from 1,800  $\mu\text{mhos/cm}$  in MW-503 to 4,880  $\mu\text{mhos/cm}$  in MW-104 and, in general, demonstrated decreasing values across the site from the northeast to the southwest. The measurements of water pH ranged from 6.1 in MW-204 to 7.9 in MW-101.

**TABLE 2**  
**SUMMARY OF GROUNDWATER SAMPLING DATA**

<u>MW*</u> <u>No.</u>	<u>Time</u>	<u>Purge</u> <u>Method</u>	<u>Volume</u> <u>Purged</u> <u>(gals.)</u>	<u>Temp.</u> <u>(°C)</u>	<u>pH</u>	<u>Electrical</u> <u>Conductivity</u> <u>(µmhos/cm)</u>	<u>Water</u> <u>Turb.</u>
101	09/06/88 (14:15)	HB	0.75	20	7.9	2950	gray, v. cloudy
103	09/06/88 (15:35)	HB	5.0	24	7.5	3060	gray, cloudy
104	09/07/88 (14:55)	SP	20	22	7.5	4880	gray, cloudy
201	09/08/88 (11:15)	SP	25	20	6.2	2210	clear to sl. cloudy
202	a	a	a	a	a	a	a
203	09/07/88 (17:00)	SP	20	21	6.3	3160	sl. cloudy
204	09/07/88 (10:00)	SP	20	21	6.1	2250	lt.gray sl. cloudy
205	09/07/88 (15:55)	SP	20	21	7.3	2110	lt.gray sl. cloudy
206	09/08/88 (16:30)	SP	30	21	7.7	2280	sl. cloudy
501	b	b	b	b	b	b	b

Table 2 (continued)

Summary of Groundwater Sampling Data

<u>MW*</u> <u>No.</u>	<u>Time</u>	<u>Purge</u> <u>Method</u>	<u>Volume</u> <u>Purged</u> <u>(gals.)</u>	<u>Temp.</u> <u>(°C)</u>	<u>pH</u>	<u>Electrical</u> <u>Conductivity</u> <u>(µmhos/cm)</u>	<u>Water</u> <u>Turb.</u>
502	09/08/88 (15:00)	SP	35	21	7.5	2590	clear to sl. cloudy
503	09/08/88 (13:20)	SP	25	21	7.7	1800	sl. cloudy
504	b	b	b	b	b	b	b

KEY

\* = Monitoring well  
a = Insufficient water in well  
b = Not sampled due to presence of free product in well  
HB = Hand bailer  
SP = Submersible pump  
sl. = Slightly  
v. = Very

### 3.0 LABORATORY ANALYSIS

All samples were submitted to Chemical Research Laboratories, Inc., a California-certified analytical laboratory, for analysis using EPA Test Methods 601 and 624. Standard chain-of-custody procedures and documents were utilized (Appendix A). Test methods were performed following EPA monitored quality assurance/quality control procedures assuring results of laboratory analyses.

#### 3.1 EPA Test Method 601

EPA Method 601 is a purge and trap gas chromatographic method applicable to the determination of purgeable halocarbons from water samples as prescribed by 40 CFR 136.1. An inert gas is bubbled through a 5-ml water sample contained in a specifically-designed purging chamber and maintained at ambient temperature from the aqueous phase to the water vapor phase. The vapor is swept through a sorbent trap where the halocarbons are trapped. After purging is completed, the trap is heated and backflushed with the inert gas to desorb the halocarbons which are then detected with a halide specific detector. Two field reagent blanks were prepared from reagent water and carried through the sampling and handling protocol to check for possible contamination. Standard operating procedures require that compound identification should be supported by at least one additional qualitative technique, such as EPA Method 624.

#### 3.2 EPA Test Method 624

EPA method 624 is a purge and trap gas chromatographic/mass spectrometer (GC/MS) method applicable to the determination of purgeable organics from water samples, and is also prescribed by 40 CRF 136.1. An inert

gas is bubbled through a 5-ml sample contained in a specifically designed purging chamber at ambient temperature. The purgeables are efficiently transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the purgeables are trapped. After purging is completed, the sorbent column is heated and backflushed with the inert gas to desorb the purgeables into a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeables which are then detected with a mass spectrometer. Two field reagent blanks were prepared from reagent water and carried through the sampling and handling protocol to check for possible contamination.



#### 4.0 ANALYTICAL RESULTS

All analytical results are presented on the Laboratory Reports in Appendix B. Results of analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX) performed for this and the previous seven quarterly reports are summarized on Table 3 and graphically exhibited in Figures 4, 5, 6, and 7. Results of analyses for purgeable halocarbons are summarized on Table 4. In water samples extracted from the ten (10) monitoring wells, benzene concentrations ranged from non-detected (less than 5  $\mu\text{g/L}$ ) to 13,000  $\mu\text{g/L}$ , toluene concentrations ranged from non-detected (less than 5  $\mu\text{g/L}$ ) to 1,800  $\mu\text{g/L}$ , ethylbenzene concentrations ranged from non-detected (less than 5  $\mu\text{g/L}$ ) to 2,800  $\mu\text{g/L}$ , and concentrations of total xylenes ranged from non-detected (less than 5  $\mu\text{g/L}$ ) to 12,000  $\mu\text{g/L}$ . BTEX concentrations did not exceed the method detection limits (5  $\mu\text{g/L}$ ) in sample blank MW-001 and MW-002 had 6  $\mu\text{g/L}$  toluene and 35  $\mu\text{g/L}$  acetone.

Concentrations of volatile organic compounds were highest in water samples collected from monitoring wells MW-502, MW-206, MW-503, MW-201, MW-101, and MW-103, respectively. Benzene concentrations in these samples were 13,000  $\mu\text{g/L}$ , 4,200  $\mu\text{g/L}$ , 800  $\mu\text{g/L}$ , 520  $\mu\text{g/L}$ , 310  $\mu\text{g/L}$  and 300  $\mu\text{g/L}$ , respectively. Toluene concentrations of the samples collected in MW-101, MW-201, MW-206, MW-502, and MW-503 ranged from 10  $\mu\text{g/L}$  to 1,800  $\mu\text{g/L}$ ; ethylbenzene concentrations ranged from 34  $\mu\text{g/L}$  to 2,800  $\mu\text{g/L}$ ; and total xylene concentrations ranged from 13  $\mu\text{g/L}$  to 12,000  $\mu\text{g/L}$ .

The concentrations of other volatile organic compounds detected in water samples analyzed this quarter were relatively low with the exception of the acetone concentrations detected in samples from three (3) monitoring wells (Table 5). Acetone concentrations ranging from 81  $\mu\text{g/L}$  to 3,000  $\mu\text{g/L}$  were observed in MW-101 and MW-206 along the

X

**TABLE 3**  
**SUMMARY OF ANALYTICAL TEST RESULTS -**  
**VOLATILE ORGANIC COMPOUNDS**  
 (Values in  $\mu\text{g/L}$ )

MW No.	Date	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylene</u>
101	Sept. 88	310	34	10	13
	June 88	620	ND<50	ND<50	100
	Mar. 88	340	ND<100	ND<100	ND<100
	Dec. 87	140	ND<5	ND<5	ND<5
	Sept. 87	340	37	ND<30	ND<30
	June. 87	43	1.6	0.5	2.6
	Jan/Feb 87	3	2.5	TR<1	TR<1
	Nov. 86	62	3.3	1.4	1.5
	July 86	58	TR<5	ND<1	ND<1
103	Sept. 88	300	ND<5	ND<5	8
	June 88	970	ND<50	74	ND<50
	Mar. 88	ND<5	ND<5	ND<5	ND<5
	Dec. 87	12	ND<5	ND<5	ND<5
	Sept. 87	120	ND<5	ND<5	ND<5
	June 87	69	1.3	1.1	3.5
	Jan/Feb 87	180	1.0	1.0	3.9
	Nov. 86	78	ND<1	2.2	5.7
	July 86	TR4	ND<1	ND<1	ND<1
104	Sept. 88	ND<5	ND<5	ND<5	ND<5
	June 88	ND<5	ND<5	ND<5	ND<5
	Mar. 88	110	23	68	17

Table 3 (continued)

Summary of Analytical Test Results -  
Volatile Organic Compounds

MW No.	Date	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylene</u>
104	(continued)				
	Dec. 87	ND<5	ND<5	ND<5	ND<5
	Sept. 87	ND<5	ND<5	ND<5	ND<5
	June 87	0.6	ND<0.5	0.5	1.5
	Jan/Feb. 87	ND<1	ND<1	ND<1	ND<1
	Nov. 86	ND<1	ND<1	ND<1	ND<1
	July 86	ND<1	ND<1	ND<1	ND<1
201	Sept. 88	520	110	210	400
	June 88	1000	ND<50	150	250
	Mar. 88	5600	260	880	1400
	Dec. 87	290	ND<5	6	142
	Sept. 87	120	9	12	12
	June 87	290	23	12	39
	Jan/Feb 87	70	5.0	4.0	15
	Nov. 86	68	10	10	32
	July 86	ND<1	ND<1	ND<1	ND<1
203	Sept. 88	76	ND<5	ND<5	ND<5
	June 88	46	ND<5	ND<5	ND<5
	Mar. 88	103	ND<5	ND<5	ND<5
	Dec. 87	120	ND<5	ND<1	ND<1
	Sept. 87	92	ND<5	ND<5	ND<5

Table 3 (continued)

Summary of Analytical Test Results -  
Volatile Organic Compounds

MW No.	Date	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylene</u>
203	(continued)				
	June 87	1.0	1.6	0.7	2.9
	Jan/Feb 87	78	TR<1	1.0	3.4
	Nov. 86	88	TR<1	1.4	1.9
	July 86	50	ND<1	TR6	18
204	Sept. 88	6	ND<5	ND<5	ND<5
	June 88	19	ND<5	ND<5	ND<5
	Mar. 88	120	ND<20	ND<20	ND<20
	Dec. 87	9	ND<5	ND<5	ND<5
	Sept. 87	18	ND<5	ND<5	ND<5
	June 87	45	2.8	0.7	3.4
	Jan/Feb 87	9.2	2.6	TR<1	2.3
	Nov. 86	260	15	6.7	41
	July 86	TR<9	ND<1	ND<1	ND<1
205	Sept. 88	27	ND<5	ND<5	ND<5
	June 88	13	ND<5	ND<5	ND<5
	Mar. 88	74	ND<5	ND<5	8
	Dec. 87	ND<5	ND<5	ND<5	ND<5
	Sept. 87	ND<5	ND<5	ND<5	ND<5
	June 87	3.6	0.5	0.6	1.5
	Jan/Feb 87	4.3	TR<1	ND<1	1.2

Table 3 (continued)

Summary of Analytical Test Results -  
Volatile Organic Compounds

MW No.	Date	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylene</u>
205	(continued)				
	Nov. 86	7.5	ND<1	ND<1	1.5
	July 86	13	ND<1	ND<1	ND<1
206	Sept. 88	4200	2000	1000	6600
	June 88	5800	2100	2400	4900
	Mar. 88	6400	3400	3900	7300
	Dec. 87	7400	900	2300	5000
	Sept. 87	4100	1300	930	4000
	June 87	3700	1300	1300	3200
	Jan/Feb 87	4500	1100	1800	3600
	Nov. 86	6800	1800	2700	7100
	July 86	3800	TR82	1800	9000
501	Sept. 88		*Free product present*		
	June 88		*Free product present*		
	Mar. 88	4900	11000	9100	8200
	Dec. 87	8300	400	2000	1100
	Sept. 87	1400	170	ND<50	ND<50
	June 87	2200	210	40	78
	Jan/Feb 87	1500	160	TR<50	74
	Nov. 86	1500	210	67	140
	July 86	1400	290	51	470

Table 3 (continued)

Summary of Analytical Test Results -  
Volatile Organic Compounds

MW No.	Date	Benzene	Ethyl benzene	Toluene	Total Xylene
502	Sept. 88	13000	2800	1800	12000
	June 88	950	62	79	16
	Mar. 88	3600	120	400	2700
	Dec. 87	13000	900	1200	4800
	Sept. 87	8400	1300	1700	5500
	June 87	13000	1400	2100	5600
	Jan/Feb 87	6300	960	1700	5200
	Nov. 86	6200	1500	4100	8500
	July 86	10000	1200	4100	6900
503	Sept. 88	800	300	280	910
	June 88	600	340	140	600
	Mar. 88	2700	1300	1300	2400
	Dec. 87	220	ND<10	44	660
	Sept. 87	53	280	76	390
	June 87	620	330	360	510
	Jan/Feb 87	TR<25	440	956	90
	Nov. 86	95	940	290	1600
	July 86	140	ND<1	ND<1	740

Table 3 (continued)

Summary of Analytical Test Results -  
Volatile Organic Compounds

<u>MW</u> <u>No.</u>	<u>Date</u>	<u>Benzene</u>	<u>Ethyl</u> <u>benzene</u>	<u>Toluene</u>	<u>Total</u> <u>Xylene</u>
P-6	Sept. 88	-	Not operational		
	June 88	-	Not operational		
	Mar. 88	-	Not operational		
001*	Sept. 88	ND<5	ND<5	ND<5	ND<5
002*	Sept. 88	ND<5	ND<5	6	ND<5

KEY

MW = Monitoring Well

ND = This compound was not detected; the limit of detection for this analysis is the amount stated in the table above.

TR = Trace

\* = Sample Blank

Data from July 1986 to September 1987 from IT Corporation Report (October, 1987).

# FX-9 Wells



# FX-9 Wells

# FX-9 Wells

# FX-9 Wells

TABLE 4  
SUMMARY OF ANALYTICAL TEST RESULTS -  
PURGEABLE HALOCARBON COMPOUNDS  
September, 1988

<u>Monitoring Well Number</u>	<u>Concentration Compounds Detected</u>	<u>(<math>\mu\text{g/L}</math>)</u>
101*	Trans-1,2 Dichloroethane	5
103*	None Detected	
104	None Detected	
201*	None Detected	
203	Trans-1,2 Dichloroethane	4, 16***
204	1,2-Dichloroethane	9, 11***
205	Trans-1,2 Dichloroethane 1,2-Dichloroethane	3 3
206*	None Detected	
502*	None Detected	
503*	None Detected	
001**	None Detected	
002**	None Detected	

KEY

- \* A higher than normal detection limit of 10  $\mu\text{g/L}$ , 20  $\mu\text{g/L}$ , or 50  $\mu\text{g/L}$  was used due to matrix interference.
- \*\* Sample Blank
- \*\*\* Results of EPA Test Methods 601 and 624, respectively.

west side of the refinery and 20  $\mu\text{g/L}$  in MW-203. Acetone concentrations decreased to non-detected levels (10  $\mu\text{g/L}$ ) in monitoring well MW-103 and concentrations were reduced in monitoring wells MW-201, MW-203, and MW-503 from the previous quarter (June, 1988). The production well P-6 was not available for sampling; therefore, any changes in acetone concentrations occurring in this well during the quarter could not be evaluated.

A potential source for the acetone in groundwater beneath the site is apparently from west of the refinery (Figure 8). There is currently no use or storage of acetone at the refinery; therefore, there is no known potential onsite source.

TABLE 5  
SUMMARY OF ACETONE CONCENTRATIONS  
EPA METHOD 624  
(Values in  $\mu\text{g/L}$ )

<u>MW No.</u>	<u>9/88</u>	<u>6/88</u>	<u>3/88</u>	<u>12/87</u>
101	81	870	ND	ND
103	ND	1,100	50	ND
104	ND	ND	33	ND
201	ND	1,700	ND	ND
203	20	200	71	ND
204	ND	ND	400	ND
205	ND	ND	190	240
206	3,000	2,500	ND	ND
502	ND	ND	ND	1,700
503	ND	1,700	503	ND
P-6	NA	NA	NA	45
002*	35	ND	ND	ND

KEY

NA = Not Analyzed (Well could not be sampled)

ND = Not Detected (Method detection limit is 10  $\mu\text{g/L}$ )

\* = Sample blank collected after sampling MW-206

# FX-9 Wells

## 5.0 CONCLUSIONS

The monitoring and analytical results derived in the third quarter of 1988 reveal several deviations from previous quarters (Tables 3, 4, and 5). Analysis of the most recent results compared with the results from the previous quarter (June, 1988) indicate the following:

- o Free product thickness in monitoring well MW-501 increased by 0.06 feet from 1.3 feet to 1.36 feet.
- o Free product thickness in monitoring well MW-504 reduced from 1.8 feet to 1.57 feet.
- o Benzene concentrations decreased in MW-101, MW-103, MW-201, MW-204, and MW-206; and increased in MW-203, MW-205, MW-503, and significantly in MW-502.
- o Toluene concentrations remained non-detected in MW-104, MW-203, MW-204, and MW-205; decreased in MW-103, and MW-206; and increased in MW-101, MW-201, MW-503, and significantly in MW-502.
- o Ethylbenzene concentrations were not detected in MW-103, MW-104, MW-203, MW-204, and MW-205; decreased in MW-206, and MW-503; and increased in MW-101, MW-201, and significantly in MW-502.
- o Total xylene concentrations were not detected in MW-104, MW-203, MW-204, and MW-205; decreased in MW-101; and increased in MW-103, MW-201, MW-206, MW-503, and significantly in MW-502.
- o Acetone concentrations decreased in MW-101, MW-201, MW-201 and MW-503, but increased significantly in MW-206.
- o In general, analytical results of water samples from monitoring wells MW-104, MW-201, MW-203, MW-204, MW-205, and MW-206 remain consistent with the results from previous quarters.
- o Analytical results of groundwater from monitoring well MW-502 exhibited a significant increase in overall BTEX levels.
- o Analytical results of groundwater from monitoring wells MW-101 and 201 exhibited a slight increase in overall BTEX levels.



Respectfully submitted,

ERT, INC.

*Mark Wood*

Mark R. Wood  
Project Hydrogeologist

*D. C. Oliver*

Daniel C. Oliver  
Project Manager

## 6.0 REFERENCES

Bellar, T.A., and Lichtenberg, J. J. 1974. Journal American Water Works Association. Volume 66.

Bellar, T.A. and Lichtenberg, J. J. 1978. "Semi-Automated Headspace Analysis of Drinking Waters and Industrial Waters for Purgeable Volatile Organic Compounds", Proceedings from Symposium on Measurement of Organic Pollutants in Water and Wastewater, American Society for Testing and Materials, STP 686, C.E. Van Hall, editor.

Gibb, J. P., Schuller, R. M. and Griffin, R. A. 1981. Procedures for the Collection of Representative Water Quality Data from Monitoring Wells. Cooperative Groundwater Report 7, Illinois State Water Survey and Illinois State Geologic Survey, Champaign, Illinois.

IT Corporation. October, 1987. Quarterly Progress Report, Powerine Refinery, Santa Fe Springs, California.

Unwin, Jay. 1986. Investigation for Purging Groundwater Monitoring Wells and Sampling Groundwater for Volatile Organic Compounds. Presented at the ASTM Symposium on Field Methods for Groundwater Contamination Studies and Their Standardization, Cocoa Beach, Florida, February 2-7, 1986.

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United States Geological Survey. 1980. National Handbook of Recommended Methods for Water-Data Acquisition, Chapter 2, "Groundwater," Reston, Virginia.

**APPENDIX A**  
**CHAIN-OF-CUSTODY DOCUMENTS**

# CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location <i>Silver FE Springs</i>			ANALYSES  <i>EPA 601</i> <i>EPA 624</i>					
Project No. <i>5500-002-300</i>			Field Logbook No.								
Sampler: (Signature) <i>Mark Wood</i>			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
<i>MW-101</i>	<i>9/6/88</i>	<i>14:15</i>		<i>WATER</i>	<i>X</i>	<i>X</i>					
<i>MW-103</i>	<i>9/6/88</i>	<i>15:35</i>		↓	↓	↓					
<i>MW-104</i>	<i>9/7/88</i>	<i>14:55</i>									
<i>MW-205</i>	↓	<i>15:55</i>			↓	↓					
<i>MW-207</i>	↓	<i>17:00</i>		↓	↓	↓					
<i>MW-001</i>	<i>9/7/88</i>	<i>16:00</i>		<i>WATER</i>	<i>X</i>	<i>X</i>					<i>Sample Blank</i>
Relinquished by: (Signature) <i>Mark Wood</i>				Date <i>9/7/88</i>	Time <i>18:00</i>	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature)				Date	Time
Sample Disposal Method:				Disposed of by: (Signature) <i>[Signature]</i>						Date <i>9/7/88</i>	Time <i>LOM</i>
SAMPLE COLLECTOR <i>MARK WOOD</i> <i>ERT, Inc.</i> <i>19752 MacArthur Blvd, Suite 265</i> <i>IRVINE, CA 92614</i> <i>715</i>				ANALYTICAL LABORATORY <i>Special Billing No.</i> <i>CRL</i> <i>7440 Lincoln Way</i> <i>GARDEN GROVE CA</i>						<b>ERT</b>	
										Nº	

# CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location			<div style="text-align: center;">ANALYSES</div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">601</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">624</div> </div>					
Project No.			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
<div style="border: 1px solid black; padding: 2px;"> <i>Mark Wood</i> </div>											
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
MW-204	9/8/88	10:00		WATER	X	X					
MW-201		11:15									
MW-503		13:20									
MW-502		15:00									
MW-206		16:30									
MW-002	9/8/88	16:50		WATER	X	X					
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
<div style="border: 1px solid black; padding: 2px;"> <i>Mark Wood</i> </div>					9/9/88	15:00	<div style="border: 1px solid black; padding: 2px;"> <i>[Signature]</i> </div>			9/9/88	3:00 PM
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
<div style="border: 1px solid black; padding: 2px;"> <i>[Signature]</i> </div>					9/9/88	3:45 PM	<div style="border: 1px solid black; padding: 2px;"> <i>[Signature]</i> </div>				
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature)			Date	Time
							<div style="border: 1px solid black; padding: 2px;"> <i>[Signature]</i> </div>			9/9/88	3:45 PM
Sample Disposal Method:					Disposed of by: (Signature)					Date	Time
SAMPLE COLLECTOR					ANALYTICAL LABORATORY					<div style="text-align: center; font-size: 2em; font-weight: bold;">ERT</div>	
<div style="border: 1px solid black; padding: 2px;"> MARK WOOD ERT, Inc. 19782 MacARTHUR, Suite 365 IRVINE, CA 92715 </div>					<div style="border: 1px solid black; padding: 2px;"> E1026876 MLK CAL 7440 LINCOLN Way GARDEN GROVE, CA </div>						

**APPENDIX B**  
**LABORATORY REPORTS**

**CRL Environmental - South Coast**

7440 Lincoln Way • Garden Grove, CA 92641  
(213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL  
FAX: (714) 891-5917

RECEIVED

SEP 27 1988

September 22, 1988

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

ANALYSIS NO.: 825331-001/006  
ANALYSES: EPA Methods 601 & 624  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
PROJECT: Santa Fe Springs, CA  
5500-002-300

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 825331-001/006 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Results were faxed on September 21, 1988.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.

  
REVIEWED  
APPROVED

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

CRL Environmental - South Coast

7440 Lincoln Way • Garden Grove, CA 92641  
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FAX: (714) 891-5917

RECEIVED

SEP 23 1988

September 20, 1988

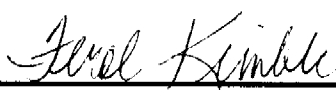
ERT  
19782 MacArthur Boulevard, Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

ANALYSIS NO.: 825130-001/006  
ANALYSES: EPA Methods 624 & 601  
DATE SAMPLED: 09/06-07/88  
DATE SAMPLE REC'D: 09/07/88  
PROJECT: 5500-002-300  
Santa Fe Springs, CA

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 825130-001/006 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expressed within the parentheses.



REVIEWED



APPROVED

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 FAX: (714) 891-5917

**LABORATORY REPORT**

<b>ERT</b> 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood	<b>ANALYSIS NO.:</b> 825130-001/006 <b>ANALYSES:</b> EPA Methods 624 & 601 <b>DATE SAMPLED:</b> 09/06-07/88 <b>DATE SAMPLE REC'D:</b> 09/07/88 <b>SAMPLE TYPE:</b> Liquid <b>PROJECT:</b> 5500-002-300 Santa Fe Springs, CA
---	---

**QA/QC SUMMARY**

<u>Date</u>	<u>Parameter(method)</u>	<u>Average Spike Recovery%</u>	<u>Acceptable Range%</u>	<u>Relative Percent Difference</u>	<u>Acceptable Range%</u>
09/08/88	1,1-Dichloroethene (EPA 624)	97	61-145	4	14
09/08/88	Chlorobenzene (EPA 624)	102	75-130	10	13
09/13/88	1,1-Dichloroethene (EPA 601)	72	60-120	12	40
09/13/88	Trichloroethene (EPA 601)	80	60-120	17	40
09/13/88	Chlorobenzene (EPA 601)	76	60-120	11	40

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FAX: (714) 891-5917

**LABORATORY REPORT**

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

ANALYSIS NO.: 825331-001/006  
ANALYSES: EPA Methods 601 & 624  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

**QA/QC SUMMARY**

<u>Date</u>	<u>Parameter(method)</u>	<u>Average Spike Recovery%</u>	<u>Acceptable Range%</u>	<u>Relative Percent Difference</u>	<u>Acceptable Range%</u>
09/12/88	1,1-Dichloroethene (EPA 624)	84	61-145	6	14
09/12/88	Chlorobenzene (EPA 624)	98	75-130	1	13
09/13/88	1,1-Dichloroethene (EPA 624)	100	61-145	5	14
09/13/88	Chlorobenzene (EPA 624)	105	75-130	2	13
09/16/88	1,1-Dichloroethene (EPA 601)	80	60-120	14	40
09/16/88	Trichloroethene (EPA 601)	79	60-120	16	40
09/16/88	Chlorobenzene (EPA 601)	81	60-120	25	40
09/19/88	1,1-Dichloroethene (EPA 601)	107	60-120	8	40
09/19/88	Trichloroethene (EPA 601)	99	60-120	22	40
09/19/88	Chlorobenzene (EPA 601)	105	60-120	23	40

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**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-101	ANALYSIS NO.: 825130-001 ANALYSES: EPA Method 601 DATE SAMPLED: 09/06/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/13/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 601/8010 VOLATILE HALOCARBONS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(10.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(10.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(10.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(10.)
M*ethylene Chloride	ND(10.)	1,1,2-Trichloroethane	ND(10.)
Trichlorofluoromethane	ND(10.)	Cis-1,3-Dichloropropene	ND(10.)
1,1-Dichloroethene	ND(10.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(10.)	Bromoform	ND(10.)
Trans-1,2-Dichloroethene	ND(10.)	Tetrachloroethene	ND(10.)
Chloroform	ND(10.)	1,1,2,2-Tetrachloroethane	ND(10.)
1,2-Dichloroethane	ND(10.)	Chlorobenzene	ND(10.)
1,1,1-Trichloroethane	ND(10.)	1,2-Dichlorobenzene	ND(10.)
Carbon Tetrachloride	ND(10.)	1,3-Dichlorobenzene	ND(10.)
Bromodichloromethane	ND(10.)	1,4-Dichlorobenzene	ND(10.)

NOTE: Higher detection limits due to matrix interference.

**CRL Environmental - South Coast**

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-101	ANALYSIS NO.: 825130-001 ANALYSES: EPA Method 624 DATE SAMPLED: 09/06/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/08/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	81.	Benzene	310.
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	5.	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	10.
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	34.
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	13.

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-103	ANALYSIS NO.: 825130-002 ANALYSES: EPA Method 601 DATE SAMPLED: 09/06/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/13/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 601/8010 VOLATILE HALOCARBONS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(10.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(10.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(10.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(10.)
Methylene Chloride	ND(10.)	1,1,2-Trichloroethane	ND(10.)
Trichlorofluoromethane	ND(10.)	Cis-1,3-Dichloropropene	ND(10.)
1,1-Dichloroethene	ND(10.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(10.)	Bromoform	ND(10.)
Trans-1,2-Dichloroethene	ND(10.)	Tetrachloroethene	ND(10.)
Chloroform	ND(10.)	1,1,2,2-Tetrachloroethane	ND(10.)
1,2-Dichloroethane	ND(10.)	Chlorobenzene	ND(10.)
1,1,1-Trichloroethane	ND(10.)	1,2-Dichlorobenzene	ND(10.)
Carbon Tetrachloride	ND(10.)	1,3-Dichlorobenzene	ND(10.)
Bromodichloromethane	ND(10.)	1,4-Dichlorobenzene	ND(10.)

NOTE: Higher detection limits due to matrix interference.

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-103	ANALYSIS NO.: 825130-002 ANALYSES: EPA Method 624 DATE SAMPLED: 09/06/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/08/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	300.
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	8.

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 FAX: (714) 891-5917

**LABORATORY REPORT****ERT**

19782 MacArthur Boulevard, Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

SAMPLE ID: MW-104

ANALYSIS NO.: 825130-003

ANALYSES: EPA Method 601

DATE SAMPLED: 09/07/88

DATE SAMPLE REC'D: 09/07/88

DATE ANALYZED: 09/13/88

SAMPLE TYPE: Liquid

PROJECT: 5500-002-300

Santa Fe Springs, CA

**EPA METHODS 601/8010 VOLATILE HALOCARBONS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
Trichlorofluoromethane	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethene	ND(1.)	2-Chloroethylvinylether	ND(1.)
1,1-Dichloroethane	ND(1.)	Bromoform	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Tetrachloroethene	ND(1.)
Chloroform	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,2-Dichloroethane	ND(1.)	Chlorobenzene	ND(1.)
1,1,1-Trichloroethane	ND(1.)	1,2-Dichlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Bromodichloromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-104	ANALYSIS NO.: 825130-003 ANALYSES: EPA Method 624 DATE SAMPLED: 09/07/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/08/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	ND(5.)
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-201

ANALYSIS NO.: 825331-002  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/19/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(10.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(10.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(10.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(10.)
Methylene Chloride	ND(10.)	1,1,2-Trichloroethane	ND(10.)
1,1-Dichloroethene	ND(10.)	Cis-1,3-Dichloropropene	ND(10.)
1,1-Dichloroethane	ND(10.)	2-Chloroethylvinylether	ND(10.)
Trans-1,2-Dichloroethene	ND(10.)	Bromoform	ND(10.)
Chloroform	ND(10.)	Tetrachloroethene	ND(10.)
1,2-Dichloroethane	ND(10.)	1,1,2,2-Tetrachloroethane	ND(10.)
1,1,1-Trichloroethane	ND(10.)	Chlorobenzene	ND(10.)
Carbon Tetrachloride	ND(10.)	Bromodichloromethane	ND(10.)
1,2-Dichlorobenzene	ND(10.)	1,3-Dichlorobenzene	ND(10.)
Trichlorofluoromethane	ND(10.)	1,4-Dichlorobenzene	ND(10.)

Note: Higher detection limit is due to matrix interference.

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FAX: (714) 891-5917

**LABORATORY REPORT**

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

Sample ID: MW-201

ANALYSIS NO.: 825331-002  
ANALYSES: EPA Method 601  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
DATE ANALYZED: 09/19/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICSPARAMETERSRESULTS IN (ug/L)

1,1-Dichloroethene	ND(10.)
Trichloroethene	ND(10.)
Tetrachloroethene	ND(10.)

Note: Higher detection limit is due to matrix interference.

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## LABORATORY REPORT

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

Sample ID: MW-201

ANALYSIS NO.: 825331-002  
ANALYSES: EPA Method 624  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
DATE ANALYZED: 09/13/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

### EPA METHODS 624/8240 VOLATILE ORGANICS

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(100.)	1,2-Dichloropropane	ND(50.)
Bromomethane	ND(100.)	Trans-1,3-Dichloropropene	ND(50.)
Vinyl Chloride	ND(100.)	Trichloroethene	ND(50.)
Chloroethane	ND(100.)	Dibromochloromethane	ND(50.)
Methylene Chloride	ND(50.)	1,1,2-Trichloroethane	ND(50.)
Acetone	ND(100.)	Benzene	520.
Carbon Disulfide	ND(50.)	cis-1,3-Dichloropropene	ND(50.)
1,1-Dichloroethene	ND(50.)	2-Chloroethylvinyl ether	ND(100.)
1,1-Dichloroethane	ND(50.)	Bromoform	ND(50.)
Trans-1,2-Dichloroethene	ND(50.)	4-Methyl-2-Pentanone	ND(100.)
Chloroform	ND(50.)	2-Hexanone	ND(100.)
1,2-Dichloroethane	ND(50.)	Tetrachloroethene	ND(50.)
2-Butanone	ND(100.)	1,1,2,2-Tetrachloroethane	ND(50.)
1,1,1-Trichloroethane	ND(50.)	Toluene	210.
Carbon Tetrachloride	ND(50.)	Chlorobenzene	ND(50.)
Vinyl Acetate	ND(100.)	Ethylbenzene	110.
Bromodichloromethane	ND(50.)	Styrene	ND(50.)
		Total Xylenes	400.

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-203	ANALYSIS NO.: 825130-005 ANALYSES: EPA Method 601 DATE SAMPLED: 09/07/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/13/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 601/8010 VOLATILE HALOCARBONS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
Trichlorofluoromethane	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethene	ND(1.)	2-Chloroethylvinylether	ND(1.)
1,1-Dichloroethane	ND(1.)	Bromoform	ND(1.)
Trans-1,2-Dichloroethene	4.	Tetrachloroethene	ND(1.)
Chloroform	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,2-Dichloroethane	ND(1.)	Chlorobenzene	ND(1.)
1,1,1-Trichloroethane	ND(1.)	1,2-Dichlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Bromodichloromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-203	ANALYSIS NO.: 825130-005 ANALYSES: EPA Method 624 DATE SAMPLED: 09/07/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/08/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	20.	Benzene	76.
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	16.	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-204

ANALYSIS NO.: 825331-001  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/16/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	9.	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichlorofluoromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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## LABORATORY REPORT

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-204

ANALYSIS NO.: 825331-001  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/16/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

### EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS

#### PARAMETERS

#### RESULTS IN (ug/L)

1,1-Dichloroethene

ND(1.)

Trichloroethene

ND(1.)

Tetrachloroethene

ND(1.)

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-204

ANALYSIS NO.: 825331-001  
 ANALYSES: EPA Method 624  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/12/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	6.
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	11.	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-205	ANALYSIS NO.: 825130-004 ANALYSES: EPA Method 601 DATE SAMPLED: 09/07/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/13/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
---	--

**EPA METHODS 601/8010 VOLATILE HALOCARBONS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
Trichlorofluoromethane	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethene	ND(1.)	2-Chloroethylvinylether	ND(1.)
1,1-Dichloroethane	ND(1.)	Bromoform	ND(1.)
Trans-1,2-Dichloroethene	3.	Tetrachloroethene	ND(1.)
Chloroform	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,2-Dichloroethane	3.	Chlorobenzene	ND(1.)
1,1,1-Trichloroethane	ND(1.)	1,2-Dichlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Bromodichloromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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 FAX: (714) 891-5917

## LABORATORY REPORT

ERT  
 19782 MacArthur Boulevard, Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

SAMPLE ID: MW-205

ANALYSIS NO.: 825130-004  
 ANALYSES: EPA Method 624  
 DATE SAMPLED: 09/07/88  
 DATE SAMPLE REC'D: 09/07/88  
 DATE ANALYZED: 09/08/88  
 SAMPLE TYPE: Liquid  
 PROJECT: 5500-002-300  
 Santa Fe Springs, CA

EPA METHODS 624/8240 VOLATILE ORGANICS

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	27.
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-206

ANALYSIS NO.: 825331-005  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/16/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(100.)	1,2-Dichloropropane	ND(100.)
Bromomethane	ND(100.)	Trans-1,3-Dichloropropene	ND(100.)
Vinyl Chloride	ND(100.)	Trichloroethene	ND(100.)
Chloroethane	ND(100.)	Dibromochloromethane	ND(100.)
Methylene Chloride	ND(100.)	1,1,2-Trichloroethane	ND(100.)
1,1-Dichloroethene	ND(100.)	Cis-1,3-Dichloropropene	ND(100.)
1,1-Dichloroethane	ND(100.)	2-Chloroethylvinylether	ND(100.)
Trans-1,2-Dichloroethene	ND(100.)	Bromoform	ND(100.)
Chloroform	ND(100.)	Tetrachloroethene	ND(100.)
1,2-Dichloroethane	ND(100.)	1,1,2,2-Tetrachloroethane	ND(100.)
1,1,1-Trichloroethane	ND(100.)	Chlorobenzene	ND(100.)
Carbon Tetrachloride	ND(100.)	Bromodichloromethane	ND(100.)
1,2-Dichlorobenzene	ND(100.)	1,3-Dichlorobenzene	ND(100.)
Trichlorofluoromethane	ND(100.)	1,4-Dichlorobenzene	ND(100.)

Note: Higher detection limit is due to matrix interference.

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FAX: (714) 891-5917

**LABORATORY REPORT**

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

Sample ID: MW-206

ANALYSIS NO.: 825331-005  
ANALYSES: EPA Method 601  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
DATE ANALYZED: 09/16/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICSPARAMETERSRESULTS IN (ug/L)

1,1-Dichloroethene	ND(100.)
Trichloroethene	ND(100.)
Tetrachloroethene	ND(100.)

Note: Higher detection limit is due to matrix interference.

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**CRL Environmental - South Coast**

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 (213) 598-0458 • (714) 898-6370 • (800) LAB-1-CRL  
 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-206

ANALYSIS NO.: 825331-005  
 ANALYSES: EPA Method 624  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/12/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(100.)	1,2-Dichloropropane	ND(50.)
Bromomethane	ND(100.)	Trans-1,3-Dichloropropene	ND(50.)
Vinyl Chloride	ND(100.)	Trichloroethene	ND(50.)
Chloroethane	ND(100.)	Dibromochloromethane	ND(50.)
Methylene Chloride	ND(50.)	1,1,2-Trichloroethane	ND(50.)
Acetone	3,000.	Benzene	4,200.
Carbon Disulfide	ND(50.)	cis-1,3-Dichloropropene	ND(50.)
1,1-Dichloroethene	ND(50.)	2-Chloroethylvinyl ether	ND(100.)
1,1-Dichloroethane	ND(50.)	Bromoform	ND(50.)
Trans-1,2-Dichloroethene	ND(50.)	4-Methyl-2-Pentanone	ND(100.)
Chloroform	ND(50.)	2-Hexanone	ND(100.)
1,2-Dichloroethane	ND(50.)	Tetrachloroethene	ND(50.)
2-Butanone	ND(100.)	1,1,2,2-Tetrachloroethane	ND(50.)
1,1,1-Trichloroethane	ND(50.)	Toluene	1,000.
Carbon Tetrachloride	ND(50.)	Chlorobenzene	ND(50.)
Vinyl Acetate	ND(100.)	Ethylbenzene	2,000.
Bromodichloromethane	ND(50.)	Styrene	ND(50.)
		Total Xylenes	6,600.

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-502

ANALYSIS NO.: 825331-004  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/16/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(100.)	1,2-Dichloropropane	ND(100.)
Bromomethane	ND(100.)	Trans-1,3-Dichloropropene	ND(100.)
Vinyl Chloride	ND(100.)	Trichloroethene	ND(100.)
Chloroethane	ND(100.)	Dibromochloromethane	ND(100.)
Methylene Chloride	ND(100.)	1,1,2-Trichloroethane	ND(100.)
1,1-Dichloroethene	ND(100.)	Cis-1,3-Dichloropropene	ND(100.)
1,1-Dichloroethane	ND(100.)	2-Chloroethylvinylether	ND(100.)
Trans-1,2-Dichloroethene	ND(100.)	Bromoform	ND(100.)
Chloroform	ND(100.)	Tetrachloroethene	ND(100.)
1,2-Dichloroethane	ND(100.)	1,1,2,2-Tetrachloroethane	ND(100.)
1,1,1-Trichloroethane	ND(100.)	Chlorobenzene	ND(100.)
Carbon Tetrachloride	ND(100.)	Bromodichloromethane	ND(100.)
1,2-Dichlorobenzene	ND(100.)	1,3-Dichlorobenzene	ND(100.)
Trichlorofluoromethane	ND(100.)	1,4-Dichlorobenzene	ND(100.)

Note: Higher detection limit is due to matrix interference.

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**LABORATORY REPORT**

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

Sample ID: MW-502

ANALYSIS NO.: 825331-004  
ANALYSES: EPA Method 601  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
DATE ANALYZED: 09/16/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICSPARAMETERSRESULTS IN (ug/L)

1,1-Dichloroethene	ND(100.)
Trichloroethene	ND(100.)
Tetrachloroethene	ND(100.)

Note: Higher detection limit is due to matrix interference.

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-502

ANALYSIS NO.: 825331-004  
 ANALYSES: EPA Method 624  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/12/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(500.)	1,2-Dichloropropane	ND(200.)
Bromomethane	ND(500.)	Trans-1,3-Dichloropropene	ND(200.)
Vinyl Chloride	ND(500.)	Trichloroethene	ND(200.)
Chloroethane	ND(500.)	Dibromochloromethane	ND(200.)
Methylene Chloride	ND(200.)	1,1,2-Trichloroethane	ND(200.)
Acetone	ND(500.)	Benzene	13,000.
Carbon Disulfide	ND(200.)	cis-1,3-Dichloropropene	ND(200.)
1,1-Dichloroethene	ND(200.)	2-Chloroethylvinyl ether	ND(500.)
1,1-Dichloroethane	ND(200.)	Bromoform	ND(200.)
Trans-1,2-Dichloroethene	ND(200.)	4-Methyl-2-Pentanone	ND(500.)
Chloroform	ND(200.)	2-Hexanone	ND(500.)
1,2-Dichloroethane	ND(200.)	Tetrachloroethene	ND(200.)
2-Butanone	ND(500.)	1,1,2,2-Tetrachloroethane	ND(200.)
1,1,1-Trichloroethane	ND(200.)	Toluene	1,800.
Carbon Tetrachloride	ND(200.)	Chlorobenzene	ND(200.)
Vinyl Acetate	ND(500.)	Ethylbenzene	2,800.
Bromodichloromethane	ND(200.)	Styrene	ND(200.)
		Total Xylenes	12,000.

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-503

ANALYSIS NO.: 825331-003  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/19/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(10.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(10.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(10.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(10.)
Methylene Chloride	ND(10.)	1,1,2-Trichloroethane	ND(10.)
1,1-Dichloroethene	ND(10.)	Cis-1,3-Dichloropropene	ND(10.)
1,1-Dichloroethane	ND(10.)	2-Chloroethylvinylether	ND(10.)
Trans-1,2-Dichloroethene	ND(10.)	Bromoform	ND(10.)
Chloroform	ND(10.)	Tetrachloroethene	ND(10.)
1,2-Dichloroethane	ND(10.)	1,1,2,2-Tetrachloroethane	ND(10.)
1,1,1-Trichloroethane	ND(10.)	Chlorobenzene	ND(10.)
Carbon Tetrachloride	ND(10.)	Bromodichloromethane	ND(10.)
1,2-Dichlorobenzene	ND(10.)	1,3-Dichlorobenzene	ND(10.)
Trichlorofluoromethane	ND(10.)	1,4-Dichlorobenzene	ND(10.)

Note: Higher detection limit is due to matrix interference.

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FAX: (714) 891-5917

**LABORATORY REPORT**

ERT	ANALYSIS NO.: 825331-003
19782 MacArthur Blvd., Suite 365	ANALYSES: EPA Method 601
Irvine, CA 92715	DATE SAMPLED: 09/08/88
ATTN: Mr. Mark Wood	DATE SAMPLE REC'D: 09/09/88
	DATE ANALYZED: 09/19/88
Sample ID: MW-503	SAMPLE TYPE: Liquid
	PROJECT: Santa Fe Springs, CA
	5500-002-300

EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS

<u>PARAMETERS</u>	<u>RESULTS IN (ug/L)</u>
1,1-Dichloroethene	ND(10.)
Trichloroethene	ND(10.)
Tetrachloroethene	ND(10.)

Note: Higher detection limit is due to matrix interference.

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## LABORATORY REPORT

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

Sample ID: MW-503

ANALYSIS NO.: 825331-003  
ANALYSES: EPA Method 624  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
DATE ANALYZED: 09/13/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

### EPA METHODS 624/8240 VOLATILE ORGANICS

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(100.)	1,2-Dichloropropane	ND(50.)
Bromomethane	ND(100.)	Trans-1,3-Dichloropropene	ND(50.)
Vinyl Chloride	ND(100.)	Trichloroethene	ND(50.)
Chloroethane	ND(100.)	Dibromochloromethane	ND(50.)
Methylene Chloride	ND(50.)	1,1,2-Trichloroethane	ND(50.)
Acetone	ND(100.)	Benzene	800.
Carbon Disulfide	ND(50.)	cis-1,3-Dichloropropene	ND(50.)
1,1-Dichloroethene	ND(50.)	2-Chloroethylvinyl ether	ND(100.)
1,1-Dichloroethane	ND(50.)	Bromoform	ND(50.)
Trans-1,2-Dichloroethene	ND(50.)	4-Methyl-2-Pentanone	ND(100.)
Chloroform	ND(50.)	2-Hexanone	ND(100.)
1,2-Dichloroethane	ND(50.)	Tetrachloroethene	ND(50.)
2-Butanone	ND(100.)	1,1,2,2-Tetrachloroethane	ND(50.)
1,1,1-Trichloroethane	ND(50.)	Toluene	280.
Carbon Tetrachloride	ND(50.)	Chlorobenzene	ND(50.)
Vinyl Acetate	ND(100.)	Ethylbenzene	360.
Bromodichloromethane	ND(50.)	Styrene	ND(50.)
		Total Xylenes	910.

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 FAX: (714) 891-5917

**LABORATORY REPORT**

ERT 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-001	ANALYSIS NO.: 825130-006 ANALYSES: EPA Method 601 DATE SAMPLED: 09/07/88 DATE SAMPLE REC'D: 09/07/88 DATE ANALYZED: 09/13/88 SAMPLE TYPE: Liquid PROJECT: 5500-002-300 Santa Fe Springs, CA
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**EPA METHODS 601/8010 VOLATILE HALOCARBONS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
Trichlorofluoromethane	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethene	ND(1.)	2-Chloroethylvinylether	ND(1.)
1,1-Dichloroethane	ND(1.)	Bromoform	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Tetrachloroethene	ND(1.)
Chloroform	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,2-Dichloroethane	ND(1.)	Chlorobenzene	ND(1.)
1,1,1-Trichloroethane	ND(1.)	1,2-Dichlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Bromodichloromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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 FAX: (714) 891-5917

**LABORATORY REPORT**

<b>ERT</b> 19782 MacArthur Boulevard, Suite 365 Irvine, CA 92715 ATTN: Mr. Mark Wood  SAMPLE ID: MW-001	<b>ANALYSIS NO.: 825130-006</b> <b>ANALYSES: EPA Method 624</b> <b>DATE SAMPLED: 09/07/88</b> <b>DATE SAMPLE REC'D: 09/07/88</b> <b>DATE ANALYZED: 09/08/88</b> <b>SAMPLE TYPE: Liquid</b> <b>PROJECT: 5500-002-300</b> Santa Fe Springs, CA
--	---

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	ND(10.)	Benzene	ND(5.)
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinylether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	ND(5.)
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-002

ANALYSIS NO.: 825331-006  
 ANALYSES: EPA Method 601  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/16/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(1.)	1,2-Dichloropropane	ND(1.)
Bromomethane	ND(1.)	Trans-1,3-Dichloropropene	ND(1.)
Vinyl Chloride	ND(1.)	Trichloroethene	ND(1.)
Chloroethane	ND(1.)	Dibromochloromethane	ND(1.)
Methylene Chloride	ND(1.)	1,1,2-Trichloroethane	ND(1.)
1,1-Dichloroethene	ND(1.)	Cis-1,3-Dichloropropene	ND(1.)
1,1-Dichloroethane	ND(1.)	2-Chloroethylvinylether	ND(1.)
Trans-1,2-Dichloroethene	ND(1.)	Bromoform	ND(1.)
Chloroform	ND(1.)	Tetrachloroethene	ND(1.)
1,2-Dichloroethane	ND(1.)	1,1,2,2-Tetrachloroethane	ND(1.)
1,1,1-Trichloroethane	ND(1.)	Chlorobenzene	ND(1.)
Carbon Tetrachloride	ND(1.)	Bromodichloromethane	ND(1.)
1,2-Dichlorobenzene	ND(1.)	1,3-Dichlorobenzene	ND(1.)
Trichlorofluoromethane	ND(1.)	1,4-Dichlorobenzene	ND(1.)

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FAX: (714) 891-5917

**LABORATORY REPORT**

ERT  
19782 MacArthur Blvd., Suite 365  
Irvine, CA 92715  
ATTN: Mr. Mark Wood

Sample ID: MW-002

ANALYSIS NO.: 825331-006  
ANALYSES: EPA Method 601  
DATE SAMPLED: 09/08/88  
DATE SAMPLE REC'D: 09/09/88  
DATE ANALYZED: 09/16/88  
SAMPLE TYPE: Liquid  
PROJECT: Santa Fe Springs, CA  
5500-002-300

**EPA METHODS 601/8010 HALOGENATED VOLATILE ORGANICS****PARAMETERS****RESULTS IN (ug/L)**

1,1-Dichloroethene

ND(1.)

Trichloroethene

ND(1.)

Tetrachloroethene

ND(1.)

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**LABORATORY REPORT**

ERT  
 19782 MacArthur Blvd., Suite 365  
 Irvine, CA 92715  
 ATTN: Mr. Mark Wood

Sample ID: MW-002

ANALYSIS NO.: 825331-006  
 ANALYSES: EPA Method 624  
 DATE SAMPLED: 09/08/88  
 DATE SAMPLE REC'D: 09/09/88  
 DATE ANALYZED: 09/12/88  
 SAMPLE TYPE: Liquid  
 PROJECT: Santa Fe Springs, CA  
 5500-002-300

**EPA METHODS 624/8240 VOLATILE ORGANICS**

	<u>(ug/L)</u>		<u>(ug/L)</u>
Chloromethane	ND(10.)	1,2-Dichloropropane	ND(5.)
Bromomethane	ND(10.)	Trans-1,3-Dichloropropene	ND(5.)
Vinyl Chloride	ND(10.)	Trichloroethene	ND(5.)
Chloroethane	ND(10.)	Dibromochloromethane	ND(5.)
Methylene Chloride	ND(5.)	1,1,2-Trichloroethane	ND(5.)
Acetone	35.	Benzene	ND(5.)
Carbon Disulfide	ND(5.)	cis-1,3-Dichloropropene	ND(5.)
1,1-Dichloroethene	ND(5.)	2-Chloroethylvinyl ether	ND(10.)
1,1-Dichloroethane	ND(5.)	Bromoform	ND(5.)
Trans-1,2-Dichloroethene	ND(5.)	4-Methyl-2-Pentanone	ND(10.)
Chloroform	ND(5.)	2-Hexanone	ND(10.)
1,2-Dichloroethane	ND(5.)	Tetrachloroethene	ND(5.)
2-Butanone	ND(10.)	1,1,2,2-Tetrachloroethane	ND(5.)
1,1,1-Trichloroethane	ND(5.)	Toluene	6.
Carbon Tetrachloride	ND(5.)	Chlorobenzene	ND(5.)
Vinyl Acetate	ND(10.)	Ethylbenzene	ND(5.)
Bromodichloromethane	ND(5.)	Styrene	ND(5.)
		Total Xylenes	ND(5.)

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